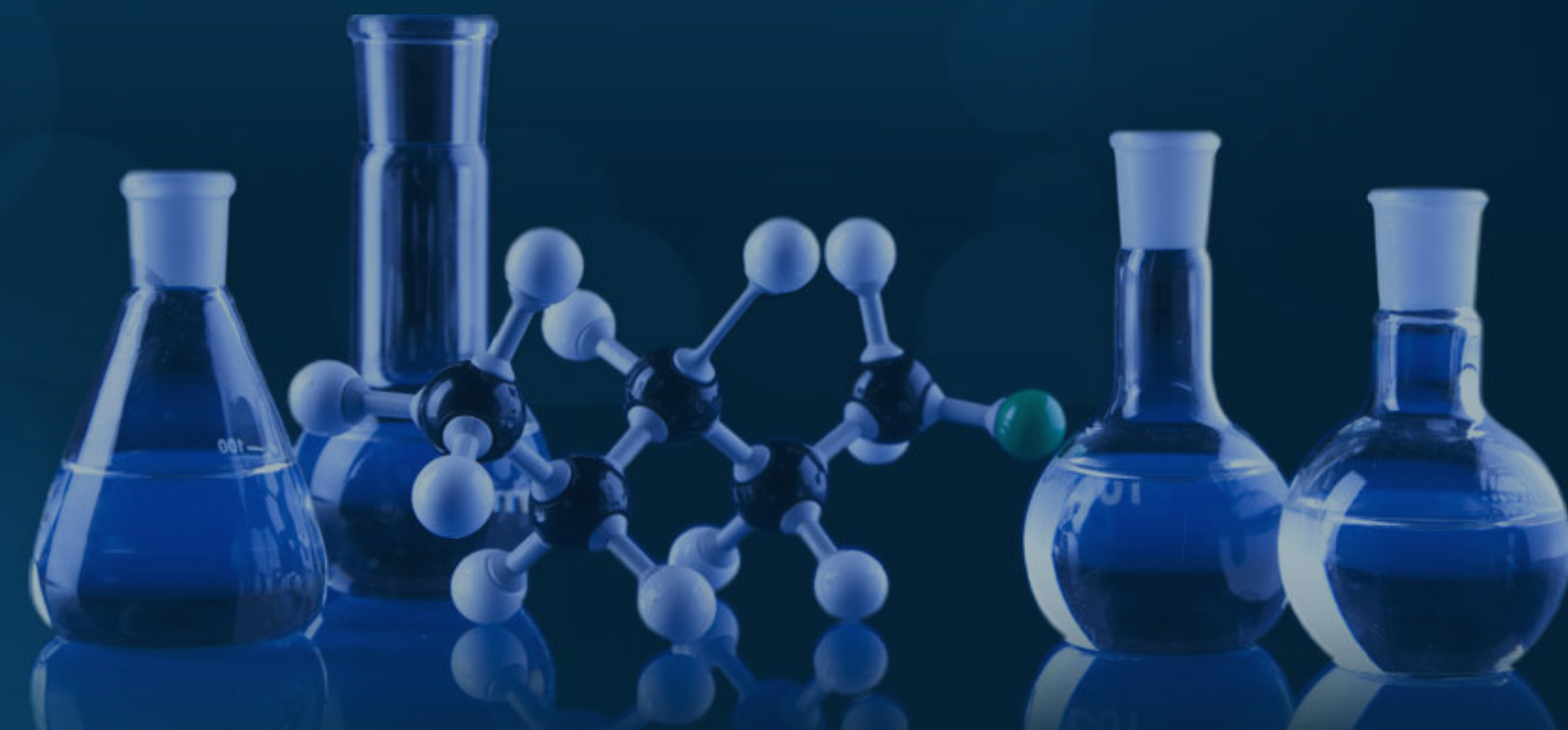




ARL is an Authority on Nutrition and the Science of Balancing Body Chemistry Through Hair Tissue Mineral Analysis!

Hair Tissue Mineral Analysis


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Vitamins and Nutritional Balancing

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Nutritional Balancing and Vitamins

An important factor to consider in nutritional balancing is the use of vitamins. Obtaining enough vitamins from food is difficult today due to food processing, food storage methods, cooking of food and enhanced requirements for vitamins.

Factors that enhance vitamin needs include stress, pregnancy, lactation, trauma, smoking, presence of toxic metals, growth during childhood, decreased absorption with age and illnesses which increase vitamin demands or lessen absorption.

The Role Of Vitamins

Vitamins function as co-enzymes, or co-factors for many chemical reactions in the body. Their roles vary widely. A good nutrition text contains a complete list of the role of the individual vitamins. In addition to these roles, vitamins can help balance the oxidation rate and enhance mineral metabolism.

Vitamin A

Vitamin A is a fat-soluble vitamin that is needed for the immune system and the integrity of the mucus membranes. It is synergistic with zinc and therefore can lower sodium. Vitamin A may be given instead of zinc, if zinc cannot be given. It may also be given with zinc to enhance the effect of zinc. Zinc is required to release vitamin A from the liver.

Vitamin A may also be given with vitamin C if one wishes to give vitamin C without raising sodium excessively.

Beta-carotene is the precursor of vitamin A. Slow oxidizers do not convert Beta-carotene to vitamin A as well as fast oxidizers. For this reason, vitamin A may be more effective for slow oxidizers.

High doses of vitamin A, up to 250,000 IU/day in adults,(75,000 mcg RAE) may be used for a week or two for infections in either fast or slow oxidizers.

B-Complex Vitamins

The B vitamins play a role in the glycolysis and Krebs energy cycles. In general, they enhance cellular energy production. Vitamins B₁, B₃, B₅ and B₆ enhance the oxidation rate. Thiamine (B₁) is a synergist with manganese. Thiamine is also helpful for a low sodium/potassium ratio. Pantothenic acid (B₅) is particularly important for adrenal gland activity, along with all the B vitamins.

Pyridoxine (B₆) is synergistic with magnesium, as well as raising sodium. All the B vitamins above are copper antagonists. B₃ and B₆ are particularly good copper antagonists and may be given in higher doses for some high-copper conditions.

Riboflavin, choline and inositol favor slow oxidation. They are more often given to fast oxidizers. Choline, inositol and niacinamide are methyl donors that alter adrenal hormone output. Choline is also the precursor for the calming neurotransmitter, acetylcholine.

Vitamin B₁₂ may lower potassium and is synergistic with cobalt, which it contains.

Folic acid is a copper antagonist and tends to increase the oxidation rate.

Other B vitamins such as PABA and biotin tend to enhance the oxidation rate.

Vitamin C

Vitamin C has many roles in the body. It is essential for adrenal activity, enhances the oxidation rate and raises sodium levels. More vitamin C is found in the adrenal glands than anywhere else in the body. Some vitamin C is helpful for both slow and fast oxidizers because of the multiple roles of vitamin C.

Vitamin C is a powerful copper antagonist. Copper oxidizes vitamin C. Vitamin C chelates and helps remove copper, as well as all the toxic metals. To use vitamin C for oral chelation, the dosage must be 2000 mg or more per day. Vitamin C enhances iron absorption.

Excessive vitamin C intake may occur in fast oxidizers. This occurs when excessive vitamin C lowers copper, a mineral which is critical for fast oxidizers. This can be overcome by giving extra copper or reducing vitamin C intake. Many of those who report difficulty taking vitamin C are fast oxidizers.

Vitamin D

Vitamin D enhances calcium absorption and utilization. Too much vitamin D can cause a calcium excess. Vitamin D may be helpful for both slow and fast oxidizers: Fast oxidizers often have a calcium deficiency. Slow oxidizers often have biounavailable calcium. This means the individual cannot properly utilize calcium. This can result in symptoms of a deficiency.

Vitamin E

Vitamin E functions as an anti-oxidant and is protective of delicate enzymes in the mitochondria of the cells. Vitamin E enhances sodium and enhances the oxidation rate. It is also synergistic with selenium.

Vitamin E is essential for adrenal gland activity, but plays a role in every cell as an anti-oxidant and protective nutrient. By enhancing sodium, vitamin E can lower zinc if taken in excessive quantity.

Vitamin F

The essential fatty acids, sometimes called vitamin F, are linoleic, linolenic and arachidonic acid. They are needed for cell membrane function and prostaglandin synthesis. They do not favor fast or slow oxidation and may be given with both oxidation types.

Vitamin K

Vitamin K is involved in blood formation. It may be synergetic with other blood-forming elements such as iron, vanadium and cobalt (vitamin B₁₂).

Vitamin-Mineral Links

In summary, the following relationships are important:

A - zinc

B₁ - manganese, thyroid gland

B₁, B₃, B₅, B₆ - sodium

B₅ - adrenals

B₆ - magnesium

C - iron

D - calcium, parathyroid gland

E - sodium, selenium

The balance of the vitamins, like the balance of the minerals, is the key. Vitamins must be integrated into a complete nutritional balancing program. Used in this manner, they are much more effective than when taken in isolation or in a hit-or-miss fashion.

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